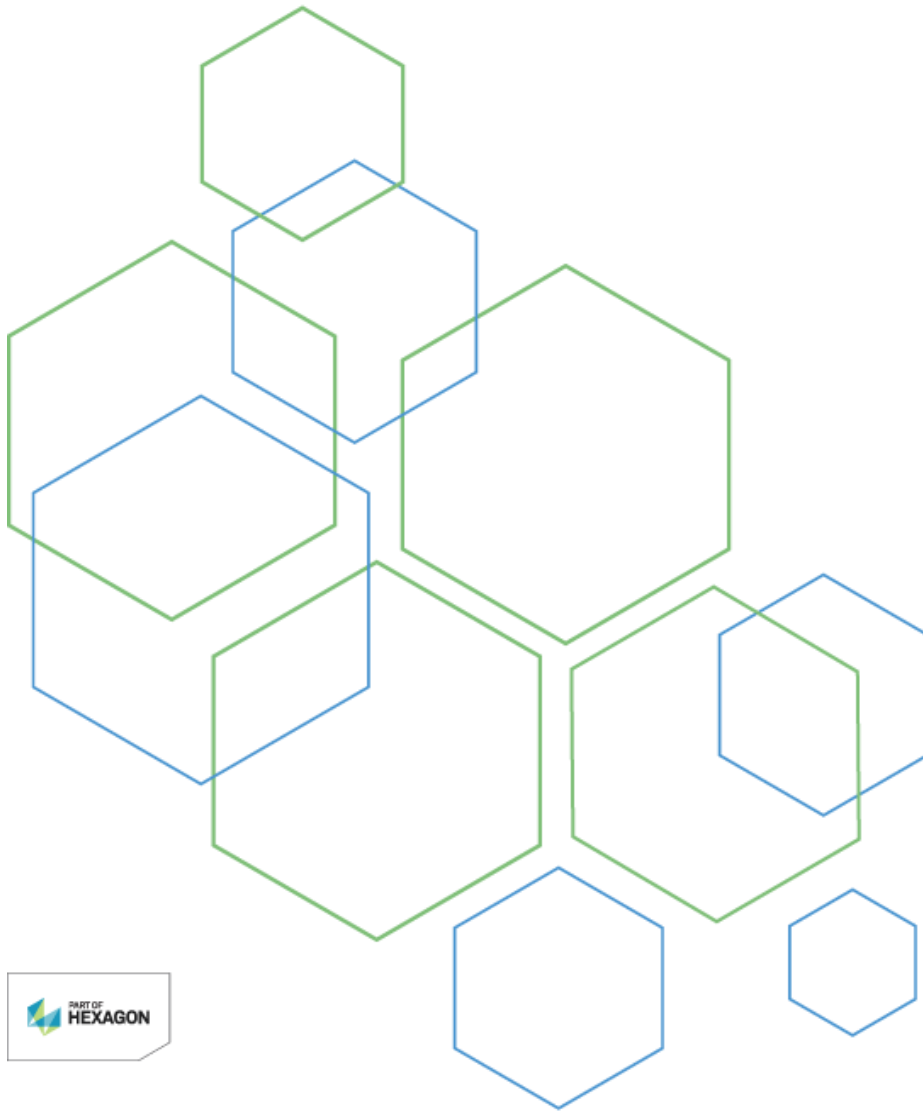


# INTERGRAPH® *Smart* ➞ 3D

Intergraph Smart 3D

Upgrade Guide



Version 2016 (11.0)  
November 2016

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305 Intergraph Way  
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# Preface

This document provides guidelines for upgrading Intergraph Smart™ 3D 2014 Plant, Marine, and MHE configurations (models, catalogs and supporting files) or Smart™ 3D 2014 R1 to Intergraph Smart™ 3D 2016 configurations. Intergraph Smart™ 3D 2016 supports upgrade from the following versions:

- Smart™ 3D 2014
- Smart™ 3D 2014 R1

**NOTE** All Smart 3D configurations from releases prior to 2014 need to be upgraded to either 2014 or 2014 R1, before upgrading to 2016. Please see the appropriate releases Upgrade Guide, delivered with the corresponding 2014 or 2014 R1 software, for upgrading to one of these versions.

Steps are also included to upgrade Smart 3D configurations that are in a SmartPlant Enterprise integrated environment, as well as those in a Global Workshare configuration.

**IMPORTANT**

- For Global Workshare configurations, upgrade from either the 2014 or 2014 R1 release to the 2016 release requires a consolidation of databases. Steps to consolidate Smart 3D configurations in a workshare environment have been incorporated into this document.

For a definition of terms used in this guide, refer to the Glossary section in the Common User's Guide, available with the Help > Printable Guides command in the software or with the Help command in the Common task.

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## SECTION 1

# Introduction

Upgrading is the process of converting an existing model, with all its associated files and databases, from compatibility with an older release to compatibility with the next sequential release of the software. The databases you must upgrade include the Site, Site schema, Catalog, Catalog schema and Model databases. The associated files you must upgrade are those that are located in the SharedContent (Symbols) share. This set of databases (plus the Reports and Reports schema databases) and files are collectively referred to as the Smart 3D configuration.

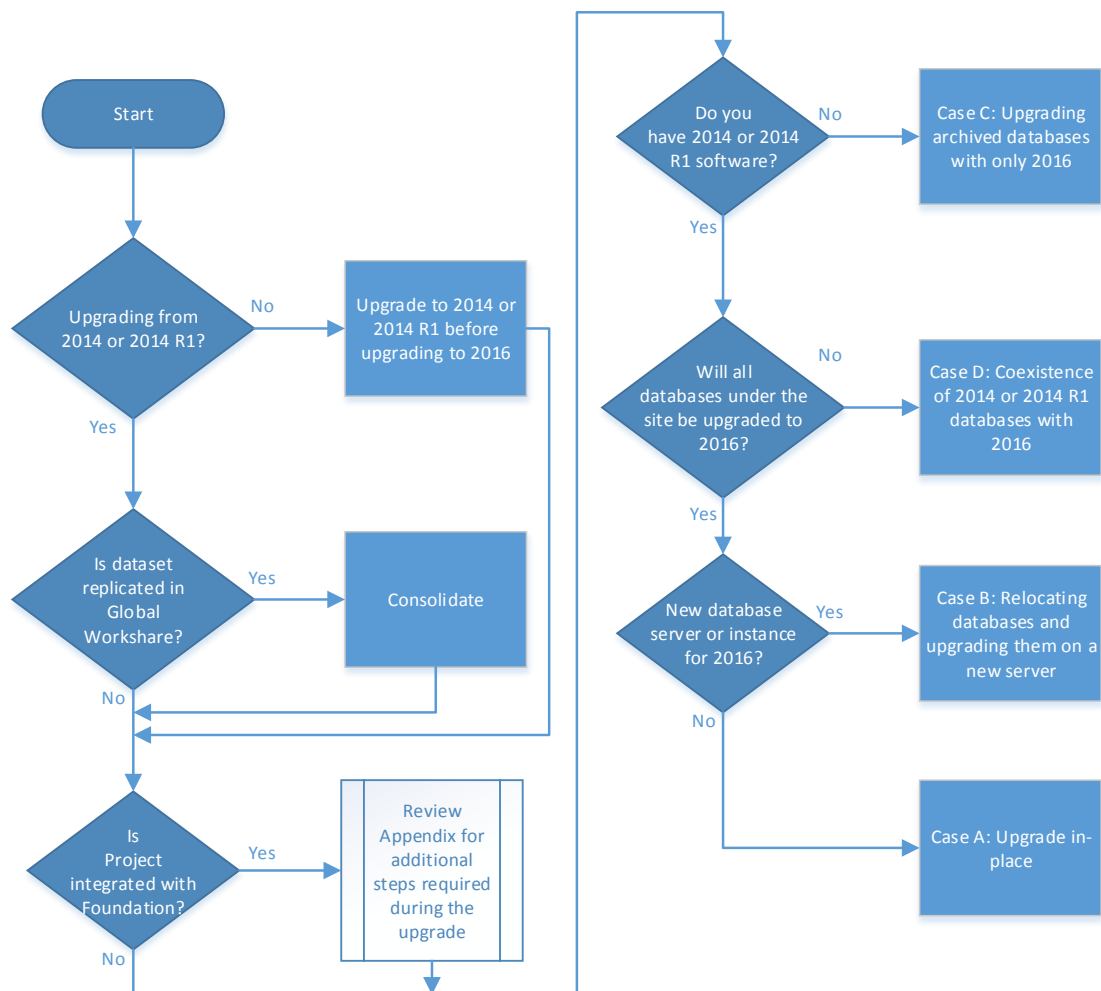
## Upgrade Overview

There are six major steps in upgrading from the 2014 or 2014 R1 release to the 2016 release.

1. **Prepare for the Upgrade** – This step includes backing up your data and verifying that the paths of reference files are correct. For more information, see *Preparing for the Upgrade* (on page 11).
2. **Upgrade your files in the SharedContent (Symbols) share** – This process is a set of manual procedures. For more information, see *Upgrading the SharedContent (Symbols) Share* (on page 16).
3. **Upgrade your databases** – The software performs this process automatically; however, you can control it using the Database Wizard and the Project Management task. For more information, see *Upgrading the Databases* (on page 22).
4. **Synchronize the Model with the Catalog** – This step loads the Catalog database changes into the model. For more information, see *Synchronizing the Model with the Catalog* (on page 25).
5. **Regenerate the Reports database** – For more information, see *Regenerating the Reports Database* (on page 26).
6. **Appendixes** – most of the Appendixes are optional steps. After completing the upgrade process, your model should have the same functionality as it did in the 2014 or 2014 R1 release. However, to take advantage of some new features and fixes it may require that you follow the additional steps.

## Upgrade Cases

For version 2016, the platform requirements have changes for servers and clients. Therefore, users must backup the version 2014 or 2014 R1 Smart 3D configuration and restore it using a client/server configuration that has the new platform requirements for version 2016. The same basic workflow will apply for each Case listed below. In the course of describing the details of each major step, this document will take into consideration four possible upgrade scenarios, or cases, each requiring a slightly different workflow. Before beginning the upgrade process, select the case that applies to your situation and follow the workflow for that case where applicable.



- **Case A.** In-place upgrade of entire 2014 or 2014 R1 Smart 3D configuration to 2016 on same server.

This case assumes a full transition of the Site and all of its Models from 2014 or 2014 R1 to 2016 on the same server, where the 2016 software will be installed on the server and client and all databases upgraded in-place. Due to the platform requirement changes in version 2016, the server and client have to be updated to the new platform requirements before



upgrading to version 2016. However, the platform requirements should not be updated until the steps in the *Preparing for Upgrade* section of this document are completed.

- **Case B.** Moving (relocating) databases and upgrading them on another server.

This is common for cases where all Models and Catalogs associated with the Site are moved and upgraded, or when some of the Models are moved to another server and upgraded while others in the Site remain on the 2014 or 2014 R1 original server. When Smart 3D configurations from one Site are relocated and upgraded to another server, the SharedContent (Symbols) folder must also be copied and upgraded to the new server or location. This should be the most common procedure used for version 2016 upgrades due to platform requirement changes.

- **Case C.** Restoring archived databases and upgrading them with only 2016 software.

This case deals with archived backups of the 2014 or 2014 R1 Smart 3D configurations that are restored in a location where 2014 or 2014 R1 is not available. In addition to the full database backup, a corresponding backup of the SharedContent (Symbols) folder is required.

- **Case D.** Coexistence of 2014 or 2014 R1 and 2016 Smart 3D configurations on same server.

This is the most complex case. In general, there can be several Sites on one server, each compatible with a different version of Smart 3D. In these cases, all Catalog and Model databases within one Site must be in the same S3D version. Smart 3D does not support different versions of Catalogs and Models within one Site database. For version 2016 Smart 3D configurations, since version 2016 has new platform requirements different than versions 2014 and 2014 R1, all sites on one server cannot have version 2014/2014 R1 sites as well as version 2016. Versions 2014 and 2014 R1 do not support the new version 2016 platform software requirements. **Therefore, this case D does not apply to upgrading to version 2016, and either Case A, B, or C will be applied for all version 2016 upgrades.**

**NOTE** If multiple Smart 3D configurations are replicated in Case D and just one (or some of them) needs to be upgraded, you must consolidate the databases being upgraded and transfer them (backup/restore) to the new Host server (which has new platform software requirements and can be the same server under a separate site). Steps have been incorporated in this document to consolidate the workshare configuration.

**IMPORTANT**

- In all cases, when one SharedContent (Symbols) folder is shared by multiple Smart 3D configurations that will be separated during an upgrade process (some Models are upgraded to 2016, while others remain on a previous release) the SharedContent (Symbols) folder must be copied and upgraded with the upgraded Smart 3D configuration(s).
- In all cases, ensure that you are pointing to the shared symbols folder for the version to which you will upgrade your model. Your upgrade of the Smart 3D configuration utilizes the content on your symbol share, and that content should be made up to date BEFORE migrating the model to the target version.

## Document Assumptions

The procedures described in this document are based on these assumptions:

1. The Smart 3D configuration and associated files you intend to upgrade to 2016 must already be upgraded to 2014 or 2014 R1 release. Smart 3D does not support upgrading directly from releases prior to 2014.
2. The Smart 3D configuration and associated files you intend to upgrade must be updated with the latest "Hot Fix" installed. If you are unsure whether you have installed the latest Hot Fix, please check with your Intergraph support representative.
3. **All customized files on the SharedContent (Symbols) share must have different names than the delivered files they were based on.** If the files have not been renamed, they will be overwritten and your customizations lost after the upgrade process is complete. If the file containing your customizations is required to retain the same name as the delivered file on which it was based, contact your Intergraph support representative for assistance on how to upgrade these files.
4. For Smart 3D configurations in an integrated environment, SmartPlant Foundation databases will need to be upgraded to version 4.3.\*, 4.4.\*, 5.\* or 6.0 before upgrading the databases to 2016.
5. All reference files (DGN, DWG, R3D, etc.) are accessible by the user account performing the upgrade.

## SECTION 2

# Preparing for the Upgrade

### All Cases A, B, and C

#### IMPORTANT

- Unless otherwise stated, the steps in this section apply to all cases and must be performed BEFORE starting the upgrade process.
- Unless otherwise stated, you must perform the steps in this section on a Workstation computer on which 2014 or 2014 R1 is installed, as well as the latest Hot Fixes.
- To help diagnose any upgrade problems you encounter, move all logs and reports you create in this section to a common location where you can easily access them.
- If unresolved or unknown errors remain after performing the steps in this section, contact Intergraph support.
- For Smart 3D configurations in an integrated environment, SmartPlant Foundation databases will need to be upgraded to version 4.3.\*, 4.4.\*, 5.\* or 6.0 before upgrading the databases. For assistance with upgrading SmartPlant Foundation databases, refer to the SmartPlant Foundation Upgrade Guide, available with the Help > Printable Guides command in the software.
- In all cases, ensure that you are pointing to the shared symbols folder for the version to which you will upgrade your model. **Your upgrade of the Smart 3D configuration utilizes the content on your symbol share, and that content should be made up to date BEFORE migrating the model to the target version.**

#### NOTES

- You may need the following references to complete this section. Unless otherwise stated, these guides are available with the Help > Printable Guides command in the software.
- The 2014 or 2014 R1 Smart3D DBIntegrity Guide.
- The 2014 or 2014 R1 Smart 3D Troubleshooting Guide.
- The 2014 or 2014 R1 Catalog Guide.
- The 2014 or 2014 R1 Common Guide.
- The 2014 or 2014 R1 Global Workshare Guide (Oracle or SQL Server).
- The 2014 or 2014 R1 Project Management Guide.
- The 2016 Smart 3D DBIntegrity Guide.
- The 2016 TroubleshootingGuide.
- For Smart 3D configurations in an integrated environment, SmartPlant Foundation Installation and Setup Guide.
- For Smart 3D configurations in an integrated environment, SmartPlant SchemaEditor User's Guide in the SmartPlant Foundation help folder.

## Consolidate the Global Workshare Configuration

### All Cases A, B, and C

#### NOTES

- For Global Workshare configurations, upgrade from 2014 or 2014 R1 to 2016 requires a consolidation of databases. The upgrade process is performed from the Host location after consolidation of the databases.
  - a. At the Host location, use the 2014 or 2014 R1 client workstation that has the Project Management component installed to consolidate the Smart 3D configuration.
  - b. After consolidation, check that all permission groups belong to the Host location.
- For assistance with these steps, refer to the section Consolidate Model from Workshare section in the 2014 or 2014 R1 Global Workshare User's Guide (Oracle or SQL Server), available with the Help > Printable Guides command in the software.

## Remove PDS Model Reference

### All Cases A, B, and C

1. Un-reference the PDS Project for each model within Project Management before taking a backup from 2014 or 2014R1. If a backup is taken with a PDS Project referenced, the user will not be able to restore and upgrade the backup in 2016.
2. Re-reference the PDS project using Reference 3D (R3D), as it is the preferred method to reference PDS models.

#### NOTES

- All Smart 3D Drawings, Filters, surface Style rules, related modeled objects, etc. that had used or had relationships to the referenced PDS project will be out of date. The Drawings will need to be updated, filters and surface style rules modified, and object relationships re-created after re-referencing the PDS project using Reference 3D (R3D).
- For assistance with the New PDS Model Reference command, refer to the Un-reference a PDS Project section in the 2014 or 2014 R1 Project Management User's Guide, available with the Help > Printable Guides command in the software.

## Backup the Model and SharedContent (Symbols) Share

### All Cases A, B, and C

1. For data security, use the Backup command in your Project Management task to create a backup of your model.

**NOTE** For assistance with the Backup command, refer to the Back Up and Restore Data section in the 2014 or 2014 R1 Project Management User's Guide, available with the Help > Printable Guides command in the software.

2. For data security, create a backup of the SharedContent (Symbols) share by copying it to a different location.

## Prepare the Workstation for the Upgrade

### All Cases A, B, and C

#### IMPORTANT

Installing the 2016 Smart 3D client software requires all previous Smart 3D installations to be uninstalled.

1. Install the required Enterprise Platform software on the client.

**NOTE** For assistance installing the required workstation Enterprise Platform software, refer to the Smart 3D Installation Guide, available with the Help > Printable Guides command in the software or on the Smart 3D media Help folder.

2. Install the 2016 Smart 3D client software, including the latest 2016 Hot Fixes when available, on the client workstation where you will perform the upgrade process.
3. If you are in an integrated environment, install version 4.3.\*, 4.4.\*, 5.\* or 6.0 of both SmartPlant Schema Component and SmartPlant Client.

**NOTE** For assistance installing version 4.3.\*, 4.4.\*, 5.\* or 6.0 of SmartPlant Schema and SmartPlant Client, refer to the SmartPlant Foundation Installation and Setup Guide, available with the Help > Printable Guides command in the software.

## Prepare the Servers for the Upgrade

#### IMPORTANT

The procedures to perform this section are dependent on the case that applies to your situation. For more details and to help you determine which case applies to your situation see the Use Case flow diagram in *Upgrade Cases* (on page 8).

### Case A. In-place upgrade of entire 2014 or 2014 R1 to 2016 on same server.

1. Install the required database server Enterprise Platform software on the server(s), if not already.

**NOTE** For assistance installing the required Enterprise Platform software, refer to the Smart 3D Installation Guide, available with the Help > Printable Guides command in the software or on the Smart 3D media Help folder.

2. Uninstall all 2014 or 2014 R1 Smart 3D Reference Data software.
3. Install the 2016 Smart 3D Reference Data and Name Generator software, including the latest 2016 Hot Fixes when available, on the server(s).

**NOTE** Installing the 2016 Smart 3D Reference Data and Name Generator software requires all previous Smart 3D installations on the system to be uninstalled.

### **Case B. Moving (relocating) databases and upgrading them on another server.**

1. Install the required database server Enterprise Platform software on the server that you want to relocate to, if not already.

**NOTE** For assistance installing the required Enterprise Platform software, refer to the Smart 3D Installation Guide, available with the Help > Printable Guides command in the software or on the Smart 3D media Help folder.

2. Install the 2016 Smart 3D Reference Data and Name Generator software, including the latest 2016 Hot Fixes when available, on the server that you want to relocate the database to.

**NOTE** Installing the 2016 Smart 3D Reference Data and Name Generator software requires all previous Smart 3D installations to be uninstalled.

3. Create the new SharedContent (Symbols) folder by copying the backed up SharedContent (Symbols) folder on the new server. Set the appropriate permissions to the share.

**IMPORTANT**

- Intergraph PP&M recommends that you do not create the SharedContent (Symbols) folder under the product folder.
  - Ensure that you are copying the shared symbols folder that you would use upon upgrading your model to 2016. Your upgrade of the Smart 3D configuration utilizes the content on your symbol share, and that content should be made up to date BEFORE migrating the model to 2016.
4. Using a 2016 workstation with Project Management installed, run Database Wizard to restore the Site and Project Management to restore the remaining Smart 3D configuration to the new server.

**IMPORTANT**

- Use the Restore one or more model databases from backup command under Tools in the Project Management task to restore the Model(s) if they will keep their original names.
- Make sure to NOT restore the databases on the original 2014 or 2014 R1 production server.

**NOTE** For assistance with the Restore command, refer to the Restore section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

### **Case C. Restoring archived databases and upgrading them with only 2016 software.**

1. Install the required database server Enterprise Platform software on the server, if not already.
2. Uninstall all 2014 or 2014 R1 Smart 3D Reference Data software, including any Service Packs and Hot Fixes.

**NOTE** Installing 2016 Smart 3D Reference Data software requires all previous Smart 3D installations to be uninstalled.

3. Install the 2016 Smart 3D Reference Data and Name Generator software, including the latest 2016 Hot Fixes when available, on the server.

**NOTE** Installing the 2016 Smart 3D Reference Data and Name Generator software requires all previous Smart 3D installations to be uninstalled.

4. Create the new SharedContent (Symbols) folder by copying the backed up SharedContent (Symbols) folder on the server. Set the appropriate permissions to the share.

**IMPORTANT**

- Intergraph PP&M recommends that you do not create the SharedContent (Symbols) folder under the product folder.
  - Ensure that you are copying the shared symbols folder that you would use upon upgrading your model to 2016. Your upgrade of the Smart 3D configuration utilizes the content on your symbol share, and that content should be made up to date **BEFORE** migrating the model to 2016.
5. Using a 2016 workstation with Project Management installed, restore the Site and the Smart 3D configuration onto the server.

**NOTE** For assistance with the Restore command, refer to the Restore section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

### **Case D. Coexistence of 2014 or 2014 R1 and 2016 Smart 3D configurations on same server.**

**IMPORTANT**

- For version 2016 Smart 3D configurations, since version 2016 has new platform requirements different than versions 2014 and 2014 R1, all sites on one server cannot have version 2014/2014 R1 sites as well as version 2016. Versions 2014 and 2014 R1 do not support the new version 2016 platform software requirements. **Therefore, this case D does not apply to upgrading to version 2016, and either Case A, B, or C will be applied for all version 2016 upgrades.**

## SECTION 3

# Upgrading the SharedContent (Symbols) Share

### IMPORTANT

- Before continuing with the following procedures, ensure that all customized files on the SharedContent (Symbols) share have different names than the delivered files on which they were based.
- If the files have not been renamed, they will be overwritten and your customizations will not be present after the upgrade is complete.
- It is recommended that all custom symbols be placed in the SharedContent\Custom Symbols folder.
- If a file containing your customizations needs to retain the same name as the delivered file on which it was based, contact your Intergraph support representative for assistance on how to upgrade this file.

## Upgrade Procedure for the SharedContent (Symbols) Share

### IMPORTANT

- The procedures to perform in this section are dependent on the case that applies to your situation. For more details on each case, refer to *Upgrade Cases* (on page 8).
- In the steps that follow, the contents of the 2016 SharedContent (Symbols) share will be copied onto the contents of your 2014 or 2014 R1 SharedContent (Symbols) share. **NOTE**  
**For an integrated environment, DO NOT copy the contents of the 2016 SharedContent\Xml folder onto the contents of your 2014 or 2014 R1 SharedContent (Symbols) share.** See *Appendix: Upgrading Your Tool Schema* (on page 31). However, the SystemSymbolConfig.xml file from the 2016 SharedContent (Symbols) share should be copied onto the 2014 or 2014 R1 SharedContent (Symbols) share. This file contains information necessary for on-the-fly registration of delivered DLLs.
- In all cases, ensure that you are pointing to the shared symbols folder that you will use when upgrading your model to 2016, as the database upgrade utilizes the contents on your symbol share, and that content should be up to date BEFORE upgrading the databases to 2016.

### For all Cases A, B, and C

1. Copy the contents of your existing 2014 or 2014 R1 SharedContent (Symbols) share to a new location on the server. This will be the 2016 SharedContent (Symbols) share.
2. If you have customized the file Styles.sha located in the SharedContent or Symbols\Drawings\Catalog\Templates folder, create a backup of this file. After completing the remaining steps in this section, follow the steps in *Upgrading Smart 3D Drawings Styles.sha File*, (on page 20), to finish the upgrade of this file.



3. Rename the Bin folder in the 2014 or 2014 R1 SharedContent (Symbols) folder to Bin\_2014 or something similar. The contents in the 2016 SharedContent Bin folder have been modified and are different than the 2014 or 2014 R1 Bin contents. If you do not rename the old bin folder, you may have conflicts with symbol versions after upgrading the SharedContent (Symbols).

### NOTES

- Check to make sure that the “<shared content location>\Bin\CommonStruct” folder is not in your SharedContent\Bin directory. If it is, delete the folder and its files as these files have been moved to the client installation.
  - Also, check to see if the “SPSSlabAssemblyConnections.dll” is not in the “<shared content location>\Bin\SmartPlantStructure\Symbols\Release directory. If it is, delete the file as it has been moved to the client installation.
4. Copy any Custom Symbols from the renamed Bin folder (Bin\_2014 or something similar) to the Custom Symbols folder if not already done.
  5. Make sure that a copy of the existing 2014 or 2014 R1 SharedContent (Symbols) exists as instructed in step 1 of this *Upgrade Procedure for the SharedContent (Symbols) Share* section.
  6. For an integrated environment, rename the XML folder to XML\_2014 or something similar. Specific files in the SharedContent\XML folder will be modified later in the upgrade process. If the 2014 or 2014 R1 integration files are overwritten with the 2016 files, the upgrade will fail for an integrated environment. This is the reason for renaming the folder. See *Appendix: Upgrading Your Tool Schema* (on page 31).
  7. Copy the contents of the delivered 2016 SharedContent (Symbols) share over your Catalog's 2014 or 2014 R1 SharedContent (Symbols) share. DO overwrite files with the same name, after ensuring you have renamed the 2014 or 2014 R1 SharedContent (Symbols) files that you have customized.
  8. If the model contains Layout objects based on the Intergraph delivered layout symbols, copy the SharedContent\Bin\Layout folder and files from the renamed Bin\_2014 or something similar and paste it into your 2016 SharedContent (Symbols) share, so that the SharedContent\Bin\Layout folder and files exist in the 2016 SharedContent directory.

**IMPORTANT** In 2016 the SharedContent\Bin\Layout folder and files have been removed from the delivered SharedContent directory. If you do not have a copy of these delivered files from 2014 R1 or prior, then they can be found on the SmartSupport Smart 3D content site.

9. Delete the renamed Bin folder (Bin\_2014 or something similar).

**NOTE** The SharedContent (Symbols) folder cannot be shared by Models using different versions of Smart 3D. Therefore, the upgraded Smart 3D configuration must use its own copy of the SharedContent (Symbols) folder, while the original Symbols or SharedContent folder stays in 2014 or 2014 R1.

10. Sign Custom .NET Assemblies

Intergraph Process, Power & Smart 3D signs all delivered .NET assemblies with a strong name. Signing an assembly is a way to guarantee the authenticity of an assembly. If you create your own custom .NET assemblies, we recommend that you sign them with your company's private key. Refer to Visual Studio help for information on signing an assembly.

11. For an integrated environment, copy the following folders and files from the files in the 2014 or 2014 R1 XML folder renamed in the previous step and overwrite the newer XML folder.
  - DesignBasisSchemas folder
  - EFUpdateCache folder
  - ConduitCommoditySubClassFeatureTypeMap.xml
  - DesignBasis\_map.xml
  - DirectionChangeCableTrayComponentTypes.xml
  - ExemptCorrelateClasses.xml
  - GenericDocumentComponent.xml
  - IgnoreChildlessValues.xml
  - P3DComponent.xml
  - PDSCComponent.xml
  - SP3DBatchQueues.xml
  - SPItoSP3DPortMapping.xml
12. For an integrated environment, to ensure that the Upgrade Schema steps described in the *Appendix: Upgrading Your Tool Schema* (on page 31) is successful, copy the SP3DPublishMap.xml file from the 2014 or 2014 R1 XML “SP3D\_FILES”, “SM3D\_FILES”, or “MHE\_FILES” folder renamed in the previous step and overwrite the SP3DPublishMap.xml file in the appropriate newer 2016 XML “SP3D\_FILES”, “SM3D\_FILES”, or “MHE\_FILES” folder.
13. For an integrated environment, ensure that the files in the SharedContent\Xml folder are not Read-only.
  - DesignBasisSchema subfolder
  - EFUpdateCache subfolder
  - Designbasis\_map.xml
  - Designbasis.xml
  - ExemptCorrelateClasses.xml
  - P3DComponent.xml
  - SP3DPublishMap.xml
  - SPItoSP3DPortMapping.xml
14. Migrate your Drawings Dimension Rules, by completing the steps outlined in *Appendix: Migrating Dimension Rules*, (on page 28).
15. If you have customized any files on the SharedContent (Symbols) share (for example, report template files, etc.) that were based on a delivered template file, you may need to modify these files to incorporate Intergraph’s fixes and enhancements. Refer to *Appendix: Upgrading Your Smart 3D Reports Template Files* (on page 38). If so, do one of the following:
  - a. Implement Intergraph’s 2016 changes into your 2014 or 2014 R1 customized file.OR

- b. Repeat the customizations you made in 2014 or 2014 R1 in the new 2016 file.
16. If you have altered the behavior of the Label Rule Manager by customizing Label UI Schema files in <shared content location>\Data\Drawings\LabelUISchemaData, you may need to repeat the customizations you made in 2014 R1 in the corresponding new 2016 schema files.
17. If you have copied symbols/files from the SmartSupport - SmartPlant Enterprise Content for SmartPlant 3D Symbols website into your SharedContent (Symbols) directory, you should recopy the same updated 2016 symbols/files from SmartSupport back into your SharedContent (Symbols) directory.
18. See *Appendix: SharedContent (Symbols) Share Changes in 2016* (on page 39), for more information that may require additional action to update existing occurrences in the model.

## Managing Custom Symbols and Naming Rules

### IMPORTANT

These steps are only necessary if you have custom symbols or naming rules.

- A custom component is a symbol or naming rule written by a user or a user modified version of components provided by Intergraph.
- Custom symbols and naming rules written in Visual C++ need to apply Option 2 below.
- Smart 3D allows custom DLLs to be used without registering them. You can take advantage of this feature by adopting Option 1 below. Or you can choose to apply Option 2, which registers custom DLLs on each client.

**NOTE** Custom COM components (for symbols or naming rules) written in Visual C++ should not be placed on symbol share in 2016.

### Option 1: Move Custom DLLs to SharedContent Directory

For more information and steps on how to manage and move Custom DLLs to the SharedContent\Custom Symbols directory, refer to the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

Or

The same information is also in each [Discipline name] 3D Symbols Reference document, available with the Help > Printable Guides command in the software.

### Option 2: Continue to Use the Custom DLLs registered on each client

With this option the custom DLLs can be registered on each client software installation. Some of the custom DLLs may have to be recompiled on the latest version. If you select this option, then there is no impact except the recompilation impact in some cases. Recompiled DLLs must be distributed to each client machine.

## Upgrading Smart 3D Reports Templates Files

If you have created custom reports based on any of the delivered report templates, or if you want to incorporate the modified or new report files delivered in 2016, review *Appendix: Upgrading Your Report Templates Files* (on page 38) for steps to incorporate the changes into your own custom or delivered reports, if necessary.

## Upgrading Smart 3D Drawings Styles.sha File

### IMPORTANT

These steps are only necessary if you have customized the file Styles.sha and after performing the steps in *Upgrading the SharedContent (Symbols) Share* (on page 16). These steps assume that the delivered Styles.sha file is located in the SharedContent\Drawings\Catalog\Templates folder on the SharedContent (Symbols) share and that your customized file is backed up at some other location.

1. Rename the delivered Styles.sha file.
2. Copy your customized Styles.sha file to the SharedContent\Drawings\Catalog\Templates folder on the SharedContent (Symbols) share and rename it, if necessary, with the name "Styles.sha".

**NOTE** The steps below are only necessary if you need to incorporate new line styles included in the delivered file that are not included in your customized Styles.sha.

3. Open your customized Styles.sha file.
4. Select the **Format > Style** menu item. The Style form appears.
5. On the **Style** form, select **Resources**.
6. Select the **Add** button on the Style Resources form.
7. On the **Add** form, browse to the delivered Styles.sha file that you renamed and select **OK**.
8. Select **OK** on the Style Resources form.
9. Select **Apply** then Close on the Style form.
10. Place a line using one of the new line styles included with the delivered file. This will permanently copy the new line style to your customized Styles.sha file.
11. Delete the line.
12. Repeat the previous two steps for each line style you want to add to your customized Styles.sha.
13. Save and exit the customized Styles.sha file.
14. Delete the renamed delivered Styles.sha file.

## Upgrading MHE Weld and Free Edge Treatment Symbols

### **IMPORTANT**

These steps are only necessary if you have customized the out-of-the-box VB Weld and FreeEdgeTreatment symbols. If you have custom versions of these symbols, implement the following change from the impact document location prior to model upgrade. This change was part of 2014 R1, and can be skipped if you are upgrading from 2014 R1 to 2016 and have already made the modification to your symbols:

- DI238770Eliminate dummy symbol output for physical connections.doc included with Impact Documents found on the SmartSupport Page. See section SharedContent (Symbols) Share Impact Statements (on page 42).

## SECTION 4

# Upgrading the Databases

### IMPORTANT

For Global Workshare configurations, upgrade from 2014 or 2014 R1 to 2016 requires a consolidation of databases. See *Consolidate the Global Workshare Configuration* (on page 12).

### NOTE

If the client workstation runs out of memory while upgrading the catalog or model databases, a message is displayed stating that this has happened and the upgrade process is stopped. If this occurs, restore the database backup and restart the upgrade process again.

You will need the following references to complete the steps in this section.

- The 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.
- The 2016 Reference Data Guide, available with the Help > Printable Guides command in the software.
- For Smart 3D configurations in an integrated environment, SmartPlant Foundation Installation and Setup Guide.

## Upgrading in a Non-Global Workshare Configuration

### Cases A and B

1. Using the 2016 client workstation that has the Project Management environment installed, upgrade the Site and Site schema databases using the Database Wizard.

### NOTE

For assistance with this step, refer to the Upgrade a Site Database section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software

2. Using the 2016 client workstation, open Project Management environment, select Tools > Upgrade Version. The new Upgrade Command Wizard will manage all upgrade processes, allowing you to select a single database or all the databases in your configuration for the upgrade.

### NOTE

For assistance with this step, refer to the Upgrade Version section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

### IMPORTANT

Ensure that you are pointing to the shared symbols folder that you will use to upgrade your model to 2016. Your upgrade of the Smart 3D configuration utilizes the content on your symbol share, and that content should be made up to date BEFORE migrating the model to 2016.

3. Select Update Custom Symbol Configuration. This will create or update the CustomSymbolConfig.xml file under the \SharedContent\Xml folder to represent all the files in the current Shared Content directory. After the file CustomSymbolConfig.xml is

created or updated, Smart 3D will use the custom DLLs from \SharedContent\Custom Symbols folder.

### NOTES

- All custom symbols must be located in the \SharedContent\Custom Symbols folder and must be unregistered on the system from which the Update Custom Symbol Configuration command is run.
- If duplicate ProglIDs are found while running the Update Custom Symbol Configuration command, a dialog will be displayed showing the duplicates. When displayed select the desired symbol to be used for the project.

4. Select the Catalog database(s) and Model database(s) to be upgraded.

5. Select Regenerate reports.

**NOTE** For assistance with the Regenerate Reports Database command, refer to the Regenerate Reports Database section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

6. Select Upgrade to upgrade the 2014 or 2014 R1 databases to 2016.

**NOTE** To view the upgrade log files, click  to open the upgrade log. The icon is only available after the selected database is upgraded.

7. For Smart 3D configurations in an integrated environment, run the Generate Design Basis command from the 2016 client workstation using the Project Management environment.

**NOTE** For assistance with this step, refer to the Generate the Design Basis section in the 2016 Project Management User's Guide. You can access this guide using the Help > Printable Guides command in the software.

8. Using the 2016 client workstation open the Project Management environment, upgrade the existing R3D attachments with the "Update Reference 3D Model(s)" command, as they will be marked out of date.

### Case C

1. Using the 2016 client workstation that has the Project Management component installed, upgrade the Site and Site Schema databases using the Database Wizard.

**NOTE** For assistance with this step, refer to the Upgrade the Site and Site Schema Databases section in the 2016 Project Management User's Guide. You can access this guide using the Help > Printable Guides command in the software.

2. Using the 2016 client workstation, restore the Model with Catalog in the upgraded Site on the new server.

**NOTE** For assistance with the Restore command, refer to the Restore section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

3. Using the 2016 client workstation, open Project Management environment, select Tools > Upgrade Version. The new Upgrade Command Wizard will manage all upgrade processes, allowing you to select a single database or all the databases in your configuration for the upgrade.

**NOTE** For assistance with this step, refer to the Upgrade Version section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

**IMPORTANT** Ensure that you are pointing to the shared symbols folder that you will use to upgrade your model to 2016. Your upgrade of the Smart 3D configuration utilizes the content on your symbol share, and that content should be made up to date BEFORE migrating the model to 2016.

4. Select Update Custom Symbol Configuration. This will create or update the CustomSymbolConfig.xml file under the \SharedContent\Xml folder to represent all the files in the current Shared Content directory. After the file CustomSymbolConfig.xml is created or updated, Smart 3D will use the custom DLLs from \SharedContent\Custom Symbols folder.

**NOTES**

- All custom symbols must be located in the \SharedContent\Custom Symbols folder and must be unregistered on the system from which the Update Custom Symbol Configuration command is run.
  - If duplicate ProglDs are found while running the Update Custom Symbol Configuration command, a dialog will be displayed showing the duplicates. When displayed select the desired symbol to be used for the project.
5. Select the Catalog database(s) and Model database(s) to be upgraded.
  6. Select Regenerate reports.

**NOTE** For assistance with the Regenerate Reports Database command, refer to the Regenerate Reports Database section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

7. Select Upgrade to upgrade the 2014 or 2014 R1 databases to 2016.

**NOTE** To view the upgrade log files, click  to open the upgrade log. The icon is only available after the selected database is upgraded.

8. For Smart 3D configurations in an integrated environment, run the Generate Design Basis command from the 2016 client workstation using the Project Management environment.

**NOTE** For assistance with this step, refer to the Generate the Design Basis section in the 2016 Project Management User's Guide. You can access this guide using the Help > Printable Guides command in the software.

9. Using the 2016 client workstation open the Project Management environment, upgrade the existing R3D attachments with the "Update Reference 3D Model(s)" command, as they will be marked out of date.



## SECTION 5

# Synchronizing the Model with the Catalog

### IMPORTANT

Prior to performing the procedures in this section, use the Backup command in the Project Management task to create a backup of your upgraded Model. For assistance with the Backup command, refer to the Backup section in the 2016 Project Management User's Guide. You can access this guide using the Help > Printable Guides command in the software.

### NOTES

You will need the following references to complete the steps in this section:

- The 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.
- The 2016 Database Integrity Reference Guide, available with the Help > Printable Guides command in the software.
- The 2016 Troubleshooting Reference Guide, available with the Help > Printable Guides command in the software.

## Synchronize the 2016 Model with the 2016 Catalog

Run the Synchronize Model with Catalog command in the Project Management task using the "Mark out-of-date occurrences" and "Regenerate views" option selected.

### NOTES

- Selecting the "Update out-of-date occurrences" option will modify objects in the model. This step is optional.
- If the optional bulkload (see *Appendix: Upgrading Reference Data* (on page 32) to add Reference Data for new functionality is intended to be done before allowing users to access upgraded dataset; it is better to wait to perform the optional "Update out-of-date occurrences" until after these bulkloads have been performed.
- For assistance with the Synchronize Model with Catalog command, refer to the Synchronize Model with Catalog section in the 2016 Project Management User's Guide. You can access this guide using the Help > Printable Guides command in the software.

## SECTION 6

# Regenerating the Reports Database

1. On the 2016 client workstation, run the Regenerate Reports Database command in the Project Management task.

**NOTE** For assistance with the Regenerate Reports Database command, refer to the Regenerate Reports Database section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

2. For Smart 3D configurations in an integrated environment, review *Appendix: Upgrading Your Tool Schema* (on page 31) for the steps to complete the upgrade.

## SECTION 7

# Post Upgrade Activities

1. Global Workshare Configuration can be re-initiated at this time. For steps to upgrade Smart 3D configurations in a Global Workshare environment with the 2016 release, see *Consolidate the Global Workshare Configuration* (on page 12).
2. Review each Appendix and determine if further actions need to be completed

**NOTE** Except for the Migrating Dimension Rules appendix, the other Appendix's are optional and are not required to proceed with production activities.

## APPENDIX A

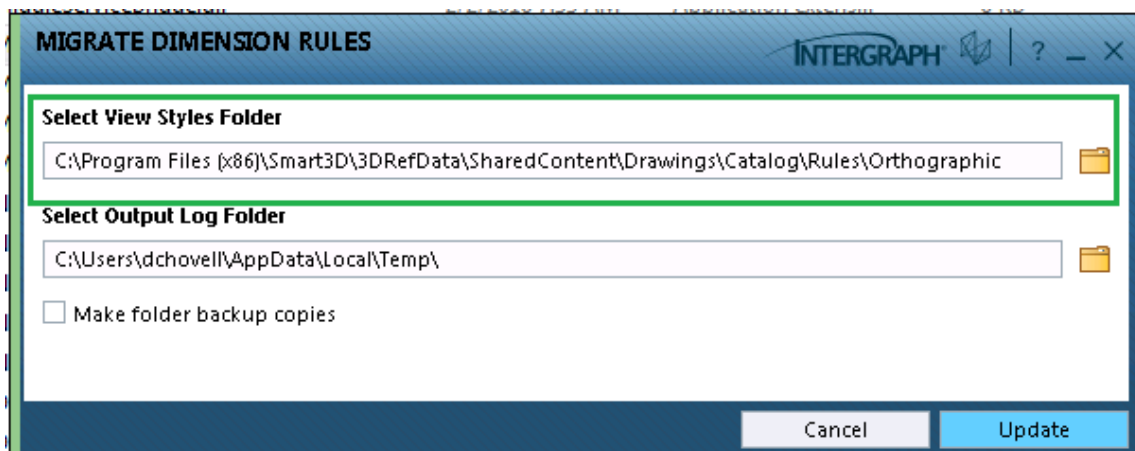
# Appendix: Migrating Dimension Rules

To ensure that all dimension rules and templates (including dimension anchor rules) have been migrated to the current XML format, the MigrateDimensionRules tool should be executed.

1. Run the MigrateDimensionRules application which is located at:  
<InstallDirectory>\Core\Container\Bin\Assemblies\Release\MigrateDimensionRules.exe.

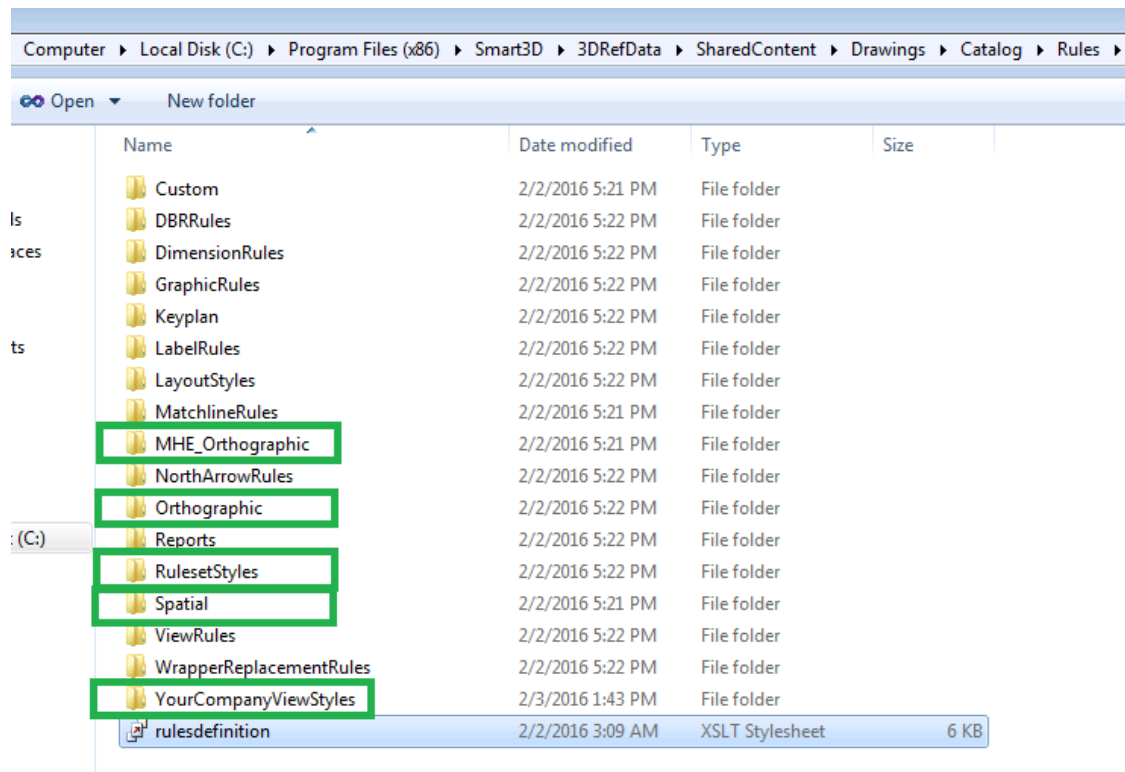


2. In the Select View Styles Folder browse to and select the [SharedContent]\Drawings\Catalog\Rules path.



**NOTES**

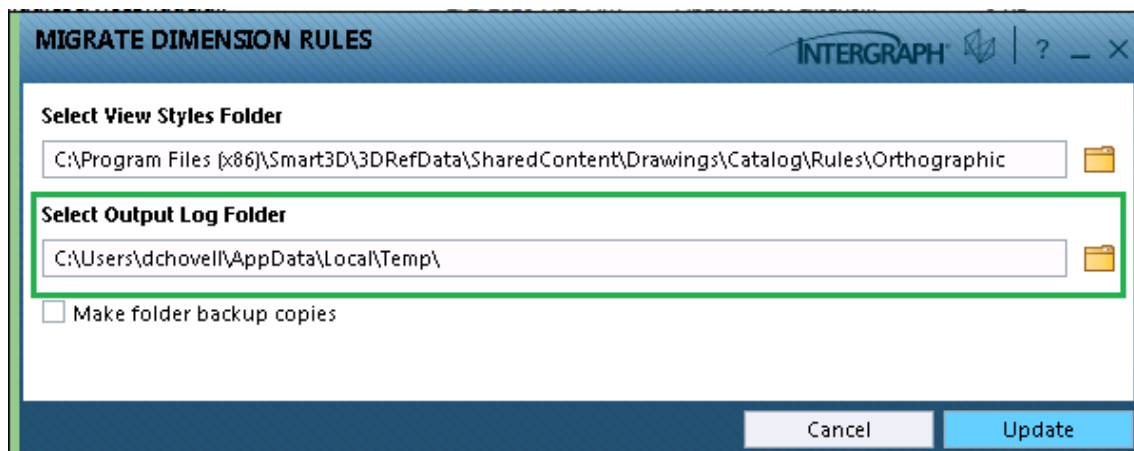
- It is recommended that you migrate the following selected delivered content directories as a minimum.
- The “YourCompanyViewStyles” folder below is used as an example of a custom View Style folder created by your company. This example shows the default SharedContent directory. Please use the location of your shared content when running this tool.



3. In the Select Output Log Folder browse to and select the desired output log folder.

**NOTE**

This step is optional as the default folder location is your temp directory.



4. Select the Make folder backup copies to ensure that the SharedContent\Drawings\Catalog\Rules\DimensionRules and SharedContent\Drawings\Catalog\Dimensions\Templates folders are automatically backed up before changing dimension rules and template files. You do not need to select this option if you are upgrading your entire set of Shared Content because the files have already been backed up in a previous step.
5. Select Update to perform the dimension rule migration.
6. A log file will appear on the screen when the Migration has finished.
7. Close this log file and you are ready to select the next view style folder for migration.
8. Repeat steps 1 and 7 for all of your View Styles folders.

# Appendix: Upgrading Your Tool Schema

This section describes the process to upgrade your Tool Schema files on the SharedContent (Symbols) share. These steps should be done after the upgrade to 2016 is complete.

1. Ensure that the files in the XML folder in the SharedContent (Symbols) share are writeable as these files will be upgraded from 2014 or 2014 R1 to 2016.
2. Run the SmartPlant > Upgrade Schema command from the Project Management task.

**NOTE** For assistance with the Upgrade Schema command, refer to the Upgrade Schema Command section in the 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.

3. If in an integrated Global Workshare environment, copy the following files from the Host location's SharedContent (Symbols) share to the same location on each satellite's SharedContent (Symbols) share:
  - a. If Plant Model Type [SharedContent]\XML\SP3D\_FILES\SP3DPublishMap.xml
  - b. If Marine Model Type [SharedContent]\XML\SM3D\_FILES\SP3DPublishMap.xml
  - c. If Material Handling Model Type  
[SharedContent]\XML\MHE\_FILES\SP3DPublishMap.xml
  - d. [SharedContent]\XML\IP3DComponent.xml
  - e. [SharedContent]\XML\DesignBasis\_Map.xml

# Appendix: Upgrading Reference Data

## IMPORTANT

- Prior to performing the procedures in this section, use the Backup command in the Project Management task to create a backup of your upgraded Model. For assistance with the Backup command, refer to the Create a Backup File section in the 2016 Project Management User's Guide. You can access this guide using the Help > Printable Guides command in the software.
- For Global Workshare configurations, you only need to perform the steps in this section at the Host location.

## NOTES

You will need the following references to complete the steps in this section.

- The 2016 Project Management User's Guide, available with the Help > Printable Guides command in the software.
- The 2016 Reference Data Guide, available with the Help > Printable Guides command in the software.
- The 2016 [Discipline Name] 3D Symbols Reference, available with the Help > Printable Guides command in the software.

## Overview

In Smart 3D 2016, changes have been made to the reference data. These changes, which include enhancements as well as fixes to the data or software, are incorporated into the reference data workbooks delivered with the product. The changes are also reflected in the database seed templates provided by Intergraph.

## NOTES

- The reference data workbooks can be found in the folder [Product Folder]\CatalogData\Bulkload\Datafiles, [Product Folder]\ShipCatalogData\BulkLoad\DataFiles, [Product Folder]\MaterialsHandling\CatalogData\Bulkload\DataFiles.
- For more information about the reference data delivered with the software, refer to the Understanding Reference Data section in the 2016 Reference Data Guide, available with the Help > Printable Guides command in the software.



## Updated Symbols for new Smart 3D Projects

In Smart 3D 2016, many part classes have been updated to reference .NET symbol definitions. These new symbols are used in the 2016 database seed templates. It is recommended that new projects created with Smart 3D 2016 utilize the new part class definitions and .NET symbols.

Review the Symbol Update Changes.xls workbook, available in the Help folder on the product media. This document maps each new .NET symbol with the old (Visual Basic) symbol and provides details regarding parameter differences and workbook location(s).

### **IMPORTANT**

- Active projects being upgraded from 2014 or 2014 R1 should continue to use their existing symbol definitions, as modifying symbol definitions in upgraded catalogs is not recommended. Moving the upgraded catalog to the .NET symbols and running Synchronize Model with Catalog command will modify and change large amounts of existing modeled objects.
- If the new .NET symbols are required in an upgraded project, then the supported workflow is to create a new 2016 catalog utilizing the .NET symbols and a new empty model, and then use the Model Data Reuse (MDR) command within the Project Management environment to copy the model from the existing upgraded model into the new 2016 model.

## Incorporate the 2016 Reference Data Changes

**IMPORTANT** For Global Workshare configurations, you need only to perform the steps in this section at the Host location.

## Bulkload Changes to Catalogs

1. To take advantage of enhancements as well as fixes to the data or software incorporated into the reference data workbooks, use the next set of procedures:
  - Review the Reference Data Changes.xls workbook, available in the Help folder on the product media. This document summarizes what reference data changes are required to take advantage of specific new functionality.
  - Using the 2016 client workstation open the folder [Product Folder]\CatalogData\BulkLoad\Datafiles, [Product Folder]\ShipCatalogData\BulkLoad\DataFiles, [Product Folder]\MaterialsHandling\CatalogData\Bulkload\DataFiles to review the most recent delivered catalog data.
    - Select the files that correspond to the discipline in which you are interested in.
2. Decide what reference data changes you want to incorporate into your catalog. Make changes in your company's project workbooks or create your own set of delta workbooks.
3. Using the 2016 client workstation on which the Bulkload Reference Data component is installed, bulkload the edited workbooks to the upgraded Catalog.

**NOTES**

- For more information on how to bulkload files to the Catalog database, refer to the 2016 Reference Data Guide, available with the Help > Printable Guides command in the software.
  - It is not recommended to use the Delete and Replace mode.
  - Add, Modify, Delete is the preferred bulkload option.
4. In a Global Workshare configuration after Bulkloading at the Host location, regenerate the Catalog and Catalog Schema views on each Satellite location using the View Generator tool. The View Generator executable, ViewGenerator.exe, is delivered in [Product Folder]\Core\Tools\Administrator\Bin.

## Oracle compatibility - 30 character limit

The delivered Marine Out-of-the-Box content was updated in 2016 to support Oracle, which has a known limitation of 30 character for part classes, custom interfaces, attributes, table names, column names, view names, and procedure names. In previous versions of Smart3D, Marine catalogs only ran on MSSQL, which is not constrained by the Oracle limitation.

Since the same workbooks are used for creating both MSSQL and Oracle catalog databases, the existing bulkload sheets were modified in 2016 with truncated names which are Oracle compliant. Because of this, older MSSQL Server databases upgraded to the current version will be impacted. See the *Content\_TR286507 Marine Oracle Compliance.docx* impact document for steps to address this issue. Migration scripts are provided for catalog schema, catalog, and model databases.

## APPENDIX D

# Appendix: Copy Filters from Catalog

Drawings and reports use filters that are predefined in the Catalog. To use the new content delivered with 2016, copy the new set of Default Filters delivered with the 2016 Catalog database to your upgraded database by performing the steps outlined in this section. This step is not mandatory in order for existing 2014 or 2014 R1 Drawings and Reports to run in 2016.

1. Using the Database Wizard on the 2016 client workstation, create a new Site and Catalog using the 2016 database templates files delivered with the software.

### NOTE

- For more information on how to create new Site and Catalog databases, refer to the Create the *Creating New Database Objects* section of the 2016 *Project Management User's Guide*, available with the Help > Printable Guides command in the software.
2. Open a Smart 3D session in the upgraded model using the 2016 client workstation. Switch to Catalog task, select the Copy Filters from Catalog command from the Tools menu and copy the delivered Catalog filters from the new 2016 Catalog to your upgraded Catalog. This will create a new "Default Filters (1)" folder. Rename this folder to "Default Filters – 2016".
  3. The following Catalog Filters have had their filter definition changed in 2014 R1 from 2014. Copy these modified filters from the new "Default Filters – 2016" folder to the "Default Filters" folder as needed, or compare the differences and modify your existing filters with the changes.

Reference 3D Cableway Element

Reference 3D Cable Tray Nozzle

Reference 3D Conduit Nozzle

Reference 3D HVAC Nozzle

Reference 3D Pipe Nozzle

Reference 3D Equipment Foundation

Reference 3D Member Part

Reference 3D Spool – hierarchy location has changed

Structure Members with Loads and Loads not assigned to an Analysis Model

4. The following Catalog Filters have had their filter definition changed in 2016 from 2014 R1. Copy these modified filters from the new "Default Filters – 2016" folder to the "Default Filters" folder as needed, or compare the differences and modify your existing filters with the changes.

Catalog Filters\Default Filters\SP3D Drawing Filters\Types of Drawings\Orthographic\Search by\Out of Date

Catalog Filters\Default Filters\SP3D Drawing Filters\Types of Drawings\Orthographic\Search by\Up to Date

Catalog Filters\Default Filters\SP3D Object Filters\Classification Properties\Electrical Equipment\Electrical Equipment\Circuit

Catalog Filters\Default Filters\SP3D Object Filters\Classification Properties\Electrical Equipment\Electrical Equipment\Circuit Breaker

Catalog Filters\Default Filters\SP3D Object Filters\Classification Properties\Electrical Equipment\Electrical Equipment\Circuit\Bus

Catalog Filters\Default Filters\SP3D Object Filters\Classification Properties\Electrical Equipment\Electrical Equipment\Circuit\Cable

Catalog Filters\Default Filters\SP3D Object Filters\Classification Properties\Electrical Equipment\Electrical Equipment\Converting Electrical Equipment\Contactor

Catalog Filters\Default Filters\SP3D Object Filters\Classification Properties\Electrical Equipment\Electrical Equipment\Converting Electrical Equipment\Disconnect Switch

Catalog Filters\Default Filters\SP3D Object Filters\Classification Properties\Electrical Equipment\Electrical Equipment\Disconnect Electrical Equipment\Battery Charger

Catalog Filters\Default Filters\SP3D Object Filters\Classification Properties\Electrical Equipment\Electrical Equipment\Power Distribution Board\Control Station

Catalog Filters\Default Filters\SP3D Object Filters\Classification Properties\Electrical Equipment\Electrical Equipment\Power Distribution Board\Junction box

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\All Objects

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Conduit\Conduit Parts\Conduit Components\Conduit 90 Degree Elbow

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Conduit\Conduit Parts\Conduit Components\Conduit Reducer

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Conduit\Conduit Parts\Conduit Components\Conduit Reducing Tee

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Piping\General Assembly

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Space\Eccentric Rectangular Prism

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Space\Eccentric Transition Element

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Space\Truncated Rectangular Prism

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Structure\Handrails\Handrail TypeA Mounted To Member

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Structure\Members by Section Name

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Structure\Slabs\Slab\Slab General

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Supports\Support Components\Weld Component

Catalog Filters\Default Filters\SP3D Report Filters\Types of Reports\Civil\Civil  
TrenchFeature Detailed Properties

Catalog Filters\Default Filters\SP3D Report Filters\Types of Reports\Civil\Civil  
TrenchRun Detailed Properties

Catalog Filters\Default Filters\SP3D Report Filters\Types of Reports\Civil\Civil  
TrenchStraightFeature Detailed Properties

Catalog Filters\Default Filters\SP3D Report Filters\Types of Reports\Civil\Civil  
TrenchTurnFeature Detailed Properties

Catalog Filters\Default Intelliship Filters\IntelliShip Drawing Filters\Types of  
Drawings\Hull Drawings\Mesh

Catalog Filters\Default Intelliship Filters\Intelliship Object Filters\Object Types\Planning  
Joints\Flat Welded Planning Joints

Catalog Filters\Default Intelliship Filters\Intelliship Object Filters\Object Types\Planning  
Joints\Horizontal Welded Planning Joints

Catalog Filters\Default Intelliship Filters\Intelliship Object Filters\Object Types\Planning  
Joints\Overhead Welded Planning Joints

Catalog Filters\Default Intelliship Filters\Intelliship Object Filters\Object Types\Planning  
Joints\Vertical Welded Planning Joints

Catalog Filters\Default MHE Filters\MHE Object Filters\Object Types\Idlers\Carry Idler

5. The following Catalog Filters have been removed in 2016 from 2014 R1. You do not have to remove these from your "Default Filters", but since the ability to reference PDS Projects through PDS Reference is no longer supported, the PDS Object Filters will not return any objects. So you can remove them as well.

All filters and filter structure under the Catalog Filters\Default Filters\PDS Object Filters

Catalog Filters\Default Filters\Reference 3D Object Filters\Object Types\Reference 3D  
Electrical\Reference 3D Cableway Element

Catalog Filters\Default Filters\Reference 3D Object Filters\Object Types\Reference 3D  
Piping\Reference 3D Spool

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Civil\Trench Feature

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Civil\Trench  
Feature\Trench Straight Feature

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Civil\Trench  
Feature\Trench Turn Feature

Catalog Filters\Default Filters\SP3D Object Filters\Object Types\Civil\Trench Run

**NOTE**

- For more information on the Copy Filters command, refer to the *Copying Filters from Catalog Command* section of the 2016 *Catalog User's Guide*, available with the Help > Printable Guides command in the software.

## APPENDIX E

# Appendix: Upgrading Your Report Templates Files

This appendix describes the steps to upgrade your report files to compatibility with the 2016 release. The modified and/or new version of these files is provided with the 2014 R1 software. *Upgrading the SharedContent (Symbols) Share* (on page 16) provides the steps to upgrade your SharedContent (Symbols) share to get these files.

While most 2014 or 2014 R1 reports will run in 2016, there have been fixes and enhancements made to some of the 2016 report files. If you have customized any of the delivered 2014 or 2014 R1 report files, you may either make the same modifications in your own customized files or repeat the same customizations in the 2016delivered template files.

## Upgrading to 2016 Reports

In order to incorporate the changes made to 2014 or 2014 R1 reports in 2016, follow these steps.

1. Copy the modified and/or new report files using the process detailed in *Upgrading the SharedContent (Symbols) Share* (on page 16) of this document.
2. Bulkload the Reports.xls workbook in Append mode if using the delivered reports templates, or make similar changes to your customized reports workbook and bulkload it.

### NOTES

- The Reports.xls workbook can be found in the folder [Product Folder]\CatalogData\Bulkload\DataFiles.
  - For more information on how to bulkload files to the Catalog database, refer to the 2016 Smart 3D Reference Data Guide, available with the Help > Printable Guides command in the software.
3. The new reports in 2016 use filters that are predefined in a Catalog created in 2016 but do not exist in the 2014 or 2014 R1 release. The newest filters should have been copied over when performing the steps outlined in *Appendix: Copy Filters from Catalog* (on page 35). To get the new reports to run, you must copy the new 2016 Report filters from the "Default Filters – 2016" folder to the 2014 or 2014 R1 "Default Filters" folder as needed.

# Appendix: SharedContent (Symbols) Share Changes in 2016

## Description of the 2016 SharedContent (Symbols) Share Contents

- SharedContent\WBSAssignableNames.txt – A customizable file that contains a list of class names that are valid for assignment to a Work Breakdown Structure.
  - SharedContent\WBSAssignableNames\_Manual.txt – A customizable file that contains a list of class names that are valid for manual assignment to a Work Breakdown Structure. Users can delete this manual file. If this file is deleted, the manual assignment behavior will be the same as versions prior to 2011 R1; no filtering of objects. All selected objects will be assigned when executing the AssignToWBSItem command.
  - SharedContent\PublishPressureRatingRanking.xls – A customizable file that contains Maximum Pressure Rating values for US standards used for publishing.
  - SharedContent\Bin – contains piping, equipment, HVAC, Hangers and Support, etc. Intergraph delivered dlls.
  - SharedContent\Brackets – contains Symbol2D generated brackets for molded form systems
  - SharedContent\Chamfer – contains Symbol2D generated chamfers for detailed plate systems
  - SharedContent\Collars – contains Symbol2D generated clips and collars for detailed plate systems penetrated by profile systems
  - SharedContent\Corner Features – contains Symbol2D generated corner features for detailed plate systems and profile systems
  - SharedContent\CrossSections – contains Symbol2D generated cross-sections for Structure.
  - SharedContent\CrossSectionType – contains bitmaps referenced by Structure.
  - SharedContent\Custom Symbols – directory to be used by customers for custom dlls.
  - SharedContent\CustomDoc – storage for custom documentation.
- IMPORTANT** Delivered files in this folder cannot be renamed, however, their contents can be modified. Any customizations made to these files can be copied back into the 2016 files.
- SharedContent\Data – contains bitmaps referenced by Hangers and Supports, custom schema and mapping files for Reference 3D, and mapping files for Translators.
  - SharedContent\Drawings – catalog location for the Drawings and Reports environment.
  - SharedContent\DrawingsWrappers – contains additional catalog files for the Drawings and Reports environment.

- SharedContent\Edge Features – contains Symbol2D generated edge features for detailed plate systems and profile systems.
- SharedContent\Flange Contours – contains Symbol2D generated flange contours for bracket plate systems with flange as reinforcement.
- SharedContent\Flange Cuts – contains Symbol2D generated flange cuts for detailed profile systems.
- SharedContent\Frame Members – contains Symbol2D files for Frame Members.
- SharedContent\HangersAndSupports – contains Symbol2D files referenced by Hangers and Supports.
- SharedContent\HoleMgmt – contains Symbol2D generated hole cuts.
- SharedContent\Import – catalog location for import and export data for Grids, Molded Forms and Planning.
- SharedContent\Labels – catalog location for labels.
- SharedContent\MarineLibrary - contains Symbol2D generated symbols for the Marine Library.
- SharedContent\MaterialsHandling – contains Symbol2D generated symbols for Materials Handling.
- SharedContent\Measurement – contains Symbol2D generated symbols for measurements.
- SharedContent\NozzleOrientations – contains bitmaps used to display nozzle properties.
- SharedContent\Openings – contains bitmaps and Symbol2D generated cross-section for Structure's opening command.
- SharedContent\Penetrations – contains Symbol2D generated slots for detailed plate systems penetrated by profile systems.
- SharedContent\Planning – contains files that are necessary for on-the-fly registration of delivered and custom DLLs for common parts (Brackets, Collars, Plates, Profiles, Assemblies and Members).
- SharedContent\PmfgIsoStyleData – catalog information for the various styles used to create piping isometric drawings.
- SharedContent\Production – contains files for Production routing data.
- SharedContent\Profile Xsections – contains Symbol2D generated cross sections for profile systems placed in Molded forms.
- SharedContent\Reports – catalog location for reports.
- SharedContent\ShapeTypes – contains bitmaps and xml definition of Shapes.
- SharedContent\Sketched Features – contains Symbol2D generated sketched features for detailed profile systems.
- SharedContent\SmartPlantStructure – additional bitmaps referenced by Structure.
- SharedContent\SMContentLibrarySymbols – contains Symbol2D generated symbols and display bitmaps specific to the MHE library.
- SharedContent\SolidEdgeParts – contains Solid Edge par and asm files for Equipment.



- SharedContent\StructManufacturing – contains Symbol2D generated symbols for manufactured parts, profiles and members.
- SharedContent\SymbolIcons – contains bitmaps referenced by route.
- SharedContent\Web Cuts – contains Symbol2D generated web cuts for detailed profile systems.
- SharedContent\Xml – contains files used by Smart 3D to work with SmartPlant integrated environment. It also includes the SystemSymbolConfig.xml and CustomSymbolConfig.xml files that are necessary for on-the-fly registration of delivered and custom DLLs.

**Intergraph recommends that users do not modify the delivered Shared Content (Symbols)** files, as Intergraph may modify these delivered files in each release. If you need to modify the delivered files, they should first copy the dll and paste it to the Custom Symbols folder directly under the Shared Content (Symbols) folder. Then, this **copied** file should be renamed.

Some of the delivered symbols may have symbol definition changes. If the major version number of the symbol definition was not incremented, neither the upgrade procedure outlined in this document nor the Synchronize Model with Catalog command will update already existing occurrences in the model that now have changed symbol definitions. If the major version number was changed, then the symbol definition in the catalog and all occurrences in the model will be updated by this upgrade process. If the minor version number of a symbol was incremented or a new aspect was added and the major version number was not incremented, then the symbol definition in the catalog will not be updated by this upgrade process. If a symbol definition has been changed and a new occurrence is placed in the model by the following types of actions, the new occurrence may be different from the already existing occurrence:

- Placing new objects
- Copy/Paste
- Model Data Reuse
- Any other command that causes an existing symbol occurrence to recompute

In order to apply the new symbol definition to existing occurrences, a custom command is available to update all occurrences in the model to match the new symbol definition. **This is only required if the major version is not incremented or an aspect was added to the symbol definition.** For the procedure to run the Update Symbol custom command (SymbolTestCmds.CUpdateSymbolDefinition) to apply the symbol definition changes to all existing occurrences in the model, see the Update Symbol topic in the following reference guides:

- Electrical 3D Symbols Reference
- Equipment 3D Symbols Reference
- Hangers and Supports Reference Data Guide
- HVAC 3D Symbols Reference
- Piping 3D Symbols Reference
- Structure 3D Symbols Reference

## SharedContent (Symbols) Share Impact Statements

Impact Statements are available on Smart Support that describe changes to the delivered out-of-the-box symbols and rules. For Smart Support location, use a World Wide Web browser to connect to <https://smartsupport.intergraph.com/app/downloads> >Smart 3D>Technical Notes and White Papers > Release Impact Statements and download the Smart 3D 2016 RTM Impact Statements zip file. Or login in to Smart Support, select View Downloads, select Smart 3D, select Technical Notes and White Papers, and then Release Impact Statements. You may review the Impact Statements to implement the required changes to your customized symbols or rules prior to the model upgrade.

Delivered Marine out-of-the-Box content was updated in 2016 to support Oracle which has a known limitation of 30 character for part class, custom interface, attribute, table names, column names, view names, procedure names. In previous versions of Smart3D, Marine catalog only ran on MSSQL violated the Oracle limitation.

Since, the same workbooks are used for creating both MSSQL and Oracle catalog databases, the existing bulk load sheets were modified in 2016 with truncated names which are Oracle compliant. So, the older MSSQL databases when upgraded to the current version will be impacted.

See the *V2016\_TR286507\_Marine\_Oracle\_Compliance.pdf* impact document in the MarineCatalogData folder for steps to address this issue. Migration scripts are provided for catalog schema, catalog, and model databases.

## Delivered Shared Content with Different Version Numbers

### 2014 to 2014 R1

There are no 2014 R1 delivered SharedContent\Bin files that have different version numbers compared to the 2014 delivered SharedContent\Bin directory. Drawing files are not included.

### 2014 R1 to 2016

The following files located in the 2016 SharedContent\Bin directory have different major version numbers (first set of digit in the version number) compared to the 2014 R1 SharedContent\Bin directory. The 2016 Upgrade and Synchronize Model with Catalog will automatically apply the necessary updates to existing objects within the model. This list does not include files outside of the Bin folder.

SharedContent\Bin\HoleMgmt\Symbols\Release\hmbestfit.dll

# Appendix: Upgrades for Performance Improvements

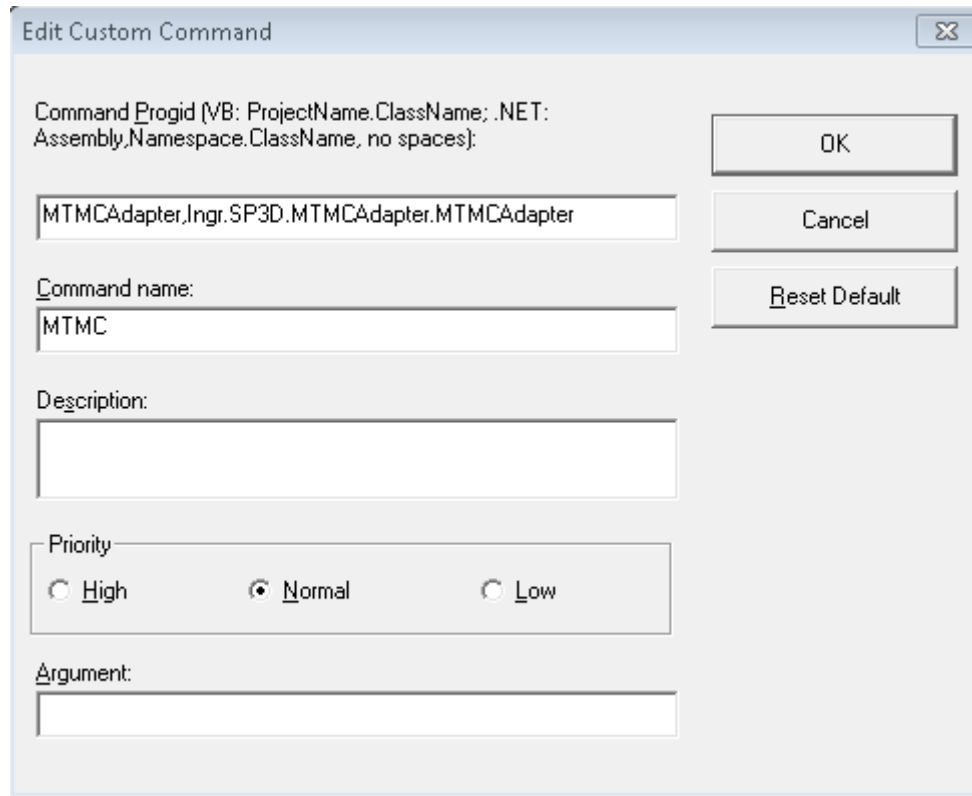
Smart 3D offers optional upgrades from 2014. These are run as custom commands once you finish your regular upgrade process and before you start working on your model. Smart 3D offers the optional upgrades described in the following sections.

**NOTE** This optional step can be skipped if upgrading from 2014 R1 to 2016 and has already been completed.

## Shared Symbol Migration

In 2016, functionality was added to group identical structural detailing symbol geometry into common shared symbols. This update significantly improves performance of detailing, particularly in large models. The purpose of this migration command is to create shared symbols for existing features in the model. This upgrade is strongly recommended by Intergraph for the purposes of improving the performance of your model during various creations and modifications for detailed objects.

1. From project management, go to Tools>Custom Commands and add MTMCAdapter.Ingr.SP3D.MTMCAdapter.MTMCAdapter.

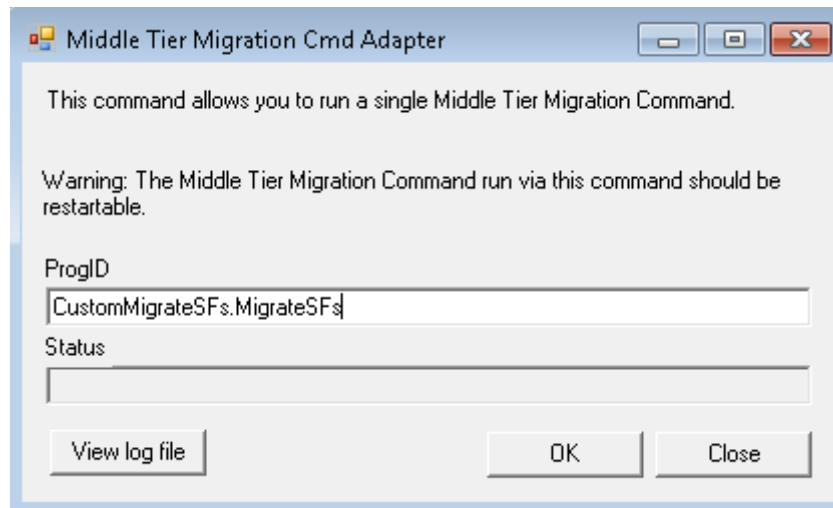


The 'Edit Custom Command' dialog box is shown. It has a title bar with a close button. The main area contains the following fields and controls:

- Command ProgID (VB: ProjectName.ClassName;.NET: Assembly.Namespace.ClassName, no spaces):** A text box containing 'MTMCAdapter.Ingr.SP3D.MTMCAdapter.MTMCAdapter'.
- Command name:** A text box containing 'MTMC'.
- Description:** An empty text box.
- Priority:** A group box containing three radio buttons: 'High', 'Normal' (selected), and 'Low'.
- Argument:** An empty text box.
- Buttons:** 'OK', 'Cancel', and 'Reset Default' are located on the right side.

2. Select the model you want and run the command. In the ProgID box paste 'CustomMigrateSFs.MigrateSFs' and press OK.

**NOTE** This command will require access to all permission groups in the model. So it is recommended that only an administrator who has full access privileges run this command.



The 'Middle Tier Migration Cmd Adapter' dialog box is shown. It has a title bar with standard window controls. The main area contains the following text and controls:

- Text:** 'This command allows you to run a single Middle Tier Migration Command.'
- Warning:** 'Warning: The Middle Tier Migration Command run via this command should be restartable.'
- ProgID:** A text box containing 'CustomMigrateSFs.MigrateSFs'.
- Status:** An empty text box.
- Buttons:** 'View log file', 'OK', and 'Close' are located at the bottom.

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